



seqid.ST25.txt  
SEQUENCE LISTING

<110> Whitt, Michael

<120> RECOMBINANT MUTANTS OF RHABDOVIRUS AND METHODS OF USE THEREOF

<130> P-3558-US

<140> 10/656,894

<141> 2003-09-08

<160> 23

<170> PatentIn version 3.1

<210> 1

<211> 229

<212> PRT

<213> Vesicular stomatitis virus

<400> 1

Met Ser Ser Leu Lys Lys Ile Leu Gly Leu Lys Gly Lys Lys Lys  
1 5 10 15

Ser Lys Lys Leu Gly Ile Ala Pro Pro Pro Tyr Glu Glu Asp Thr Ser  
20 25 30

Ala Glu Tyr Ala Pro Ser Ala Pro Ile Asp Lys Ser Tyr Phe Gly Val  
35 40 45

Asp Glu Met Asp Thr Tyr Asp Pro Asn Gln Leu Arg Tyr Glu Lys Phe  
50 55 60

Phe Phe Thr Val Lys Met Thr Val Arg Ser Asn Arg Pro Phe Arg Thr  
65 70 75 80

Tyr Ser Asp Val Ala Ala Ala Val Ser His Trp Asp His Met Tyr Ile  
85 90 95

Gly Met Ala Gly Lys Arg Pro Phe Tyr Lys Ile Leu Ala Phe Leu Gly  
100 105 110

Ser Ser Asn Leu Lys Ala Thr Pro Ala Val Leu Ala Asp Gln Gly Gln  
115 120 125

Pro Glu Tyr His Thr His Cys Glu Gly Arg Ala Tyr Leu Pro His Arg  
130 135 140

Met Gly Lys Thr Pro Pro Met Leu Asn Val Pro Glu His Phe Arg Arg  
145 150 155 160

Pro Phe Asn Ile Gly Leu Tyr Lys Gly Thr Ile Glu Leu Thr Met Thr  
165 170 175

Ile Tyr Asp Asp Glu Ser Leu Glu Ala Ala Pro Met Ile Trp Asp His  
180 185 190

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Phe Asn Ser Ser Lys Phe Ser Asp Phe Arg Glu Lys Ala Leu Met Phe  
195 200 205

Gly Leu Ile Val Glu Lys Lys Ala Ser Gly Ala Trp Val Leu Asp Ser  
210 215 220

Ile Ser His Phe Lys  
225

<210> 2  
<211> 229  
<212> PRT  
<213> Vesicular stomatitis virus

<400> 2

Met Ser Ser Leu Lys Lys Ile Leu Gly Leu Lys Gly Lys Gly Lys Lys  
1 5 10 15

Ser Lys Lys Leu Gly Ile Ala Pro Pro Pro Tyr Glu Glu Asp Thr Ser  
20 25 30

Met Glu Tyr Ala Pro Ser Ala Pro Ile Asp Lys Ser Tyr Phe Gly Val  
35 40 45

Asp Glu Ala Asp Thr Tyr Asp Pro Asn Gln Leu Arg Tyr Glu Lys Phe  
50 55 60

Phe Phe Thr Val Lys Met Thr Val Arg Ser Asn Arg Pro Phe Arg Thr  
65 70 75 80

Tyr Ser Asp Val Ala Ala Ala Val Ser His Trp Asp His Met Tyr Ile  
85 90 95

Gly Met Ala Gly Lys Arg Pro Phe Tyr Lys Ile Leu Ala Phe Leu Gly  
100 105 110

Ser Ser Asn Leu Lys Ala Thr Pro Ala Val Leu Ala Asp Gln Gln Gln  
115 120 125

Pro Glu Tyr His Thr His Cys Glu Gly Arg Ala Tyr Leu Pro His Arg  
130 135 140

Met Gly Lys Thr Pro Pro Met Leu Asn Val Pro Glu His Phe Arg Arg  
145 150 155 160

Pro Phe Asn Ile Gly Leu Tyr Lys Gly Thr Ile Glu Leu Thr Met Thr  
165 170 175

Ile Tyr Asp Asp Glu Ser Leu Glu Ala Ala Pro Met Ile Trp Asp His  
180 185 190

seqid.ST25.txt

Phe Asn Ser Ser Lys Phe Ser Asp Phe Arg Glu Lys Ala Leu Met Phe  
195 200 205

Gly Leu Ile Val Glu Lys Lys Ala Ser Gly Ala Trp Val Leu Asp Ser  
210 215 220

Ile Ser His Phe Lys  
225

<210> 3  
<211> 229  
<212> PRT  
<213> Vesicular stomatitis virus

<400> 3

Met Ser Ser Leu Lys Lys Ile Leu Gly Leu Lys Gly Lys Gly Lys Lys  
1 5 10 15

Ser Lys Lys Leu Gly Ile Ala Pro Pro Pro Tyr Glu Glu Asp Thr Ser  
20 25 30

Met Glu Tyr Ala Pro Ser Ala Pro Ile Asp Lys Ser Tyr Phe Gly Val  
35 40 45

Asp Glu Met Asp Thr Tyr Asp Pro Asn Gln Leu Arg Tyr Glu Lys Phe  
50 55 60

Phe Phe Thr Val Lys Met Thr Val Arg Ser Asn Arg Pro Phe Arg Thr  
65 70 75 80

Tyr Ser Asp Val Ala Ala Ala Val Ser His Trp Asp His Met Tyr Ile  
85 90 95

Gly Met Ala Gly Lys Arg Pro Phe Tyr Lys Ile Leu Ala Phe Leu Gly  
100 105 110

Ser Ser Asn Leu Lys Ala Thr Pro Ala Val Leu Ala Asp Gln Gln Gly  
115 120 125

Pro Glu Tyr His Ala His Cys Glu Gly Arg Ala Tyr Leu Pro His Arg  
130 135 140

Met Gly Lys Thr Pro Pro Met Leu Asn Val Pro Glu His Phe Arg Arg  
145 150 155 160

Pro Phe Asn Ile Gly Leu Tyr Lys Gly Thr Ile Glu Leu Thr Met Thr  
165 170 175

Ile Tyr Asp Asp Glu Ser Leu Glu Ala Ala Pro Met Ile Trp Asp His  
180 185 190

seqid.ST25.txt

Phe Asn Ser Ser Lys Phe Ser Asp Phe Arg Glu Lys Ala Leu Met Phe  
195 200 205

Gly Leu Ile Val Glu Lys Lys Ala Ser Gly Ala Trp Val Leu Asp Ser  
210 215 220

Ile Ser His Phe Lys  
225

<210> 4  
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<212> PRT  
<213> Vesicular stomatitis virus

<400> 4

Met Ser Ser Leu Lys Lys Ile Leu Gly Leu Lys Gly Lys Gly Lys Lys  
1 5 10 15

Ser Lys Lys Leu Gly Ile Ala Pro Pro Pro Tyr Glu Glu Asp Thr Ser  
20 25 30

Met Glu Tyr Ala Pro Ser Ala Pro Ile Asp Lys Ser Tyr Phe Gly Val  
35 40 45

Asp Glu Met Asp Thr Tyr Asp Pro Asn Gln Leu Arg Tyr Glu Lys Phe  
50 55 60

Phe Phe Thr Val Lys Met Thr Val Arg Ser Asn Arg Pro Phe Arg Thr  
65 70 75 80

Tyr Ser Asp Val Ala Ala Ala Val Ser His Trp Asp His Met Tyr Ile  
85 90 95

Gly Met Ala Gly Lys Arg Pro Phe Tyr Lys Ile Leu Ala Phe Leu Gly  
100 105 110

Ser Ser Asn Leu Lys Ala Thr Pro Ala Val Leu Ala Asp Gln Gly Gln  
115 120 125

Pro Glu Tyr His Thr His Cys Glu Gly Arg Ala Tyr Leu Pro His Arg  
130 135 140

Met Gly Lys Thr Pro Pro Met Leu Asn Val Pro Glu His Phe Arg Arg  
145 150 155 160

Pro Phe Asn Ile Gly Leu Tyr Lys Gly Thr Ile Glu Leu Thr Met Thr  
165 170 175

Ile Tyr Asp Asp Glu Ser Leu Glu Ala Ala Pro Met Ile Trp Asp His  
180 185 190

Phe Asn Ser Ser Lys Phe Ser Asp Phe Arg Glu Lys Ala Leu Met Phe  
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195

200

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205

Gly Leu Ile Val Glu Lys Lys Ala Ser Gly Ala Trp Val Leu Asp Ser  
210 215 220

Ile Gly His Phe Lys  
225

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attgacaaat cctatTTgg agttgacgag gctgacacacct atgatccgaa tcaattaaga 180  
tatgagaaat tcttctttac agtggaaaatg acggtagat ctaatcggtcc gttcagaaca 240  
tactcagatg tggcagccgc tgtatccat tgggatcaca tgtacatcg 300  
aaacgtccct tctacaaaat cttggcttt ttgggttctt ctaatctaaa ggccactcca 360  
gcggtattgg cagatcaagg tcaaccagag tatcacgctc actgcgaagg cagggcttat 420  
ttgccacata ggtatgggaa gacccctccc atgctcaatg taccagagca cttcagaaga 480  
ccattcaata taggtcttta caagggAACG attgagctca caatgaccat ctacgatgat 540  
gagtcactgg aagcagctcc tatgatctgg gatcattca attcttccaa atttctgat 600  
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gtcctggact ctatcgccca cttcaaatga 690

<210> 6  
<211> 42  
<212> PRT  
<213> Vesicular stomatitis virus

<400> 6

Phe Glu His Pro His Ile Gln Asp Ala Ala Ser Gln Leu Pro Asp Asp  
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Glu Ser Leu Phe Phe Gly Asp Thr Gly Leu Ser Lys Asn Pro Ile Ala  
20 25 30

Leu Val Glu Gly Trp Phe Ser Ser Trp Lys  
35 40

<210> 7  
<211> 42  
<212> PRT  
<213> Vesicular stomatitis virus

<400> 7

seqid.ST25.txt

Phe Glu His Pro His Ile Gln Asp Ala Ala Ser Gln Leu Pro Asp Asp  
1 5 10 15

Glu Ser Leu Phe Phe Gly Asp Thr Gly Leu Ser Lys Asn Pro Ile Glu  
20 25 30

Leu Val Glu Asp Trp Phe Ser Ser Trp Lys  
35 40

<210> 8  
<211> 42  
<212> PRT  
<213> Vesicular stomatitis virus

<400> 8

Phe Glu His Pro His Ile Gln Asp Ala Ala Ser Gln Leu Pro Asp Asp  
1 5 10 15

Glu Ser Leu Phe Phe Gly Asp Thr Gly Leu Ser Lys Asn Pro Ile Glu  
20 25 30

Leu Val Glu Gly Ala Phe Ser Ser Trp Lys  
35 40

<210> 9  
<211> 42  
<212> PRT  
<213> Vesicular stomatitis virus

<400> 9

Phe Glu His Pro His Ile Gln Asp Ala Ala Ser Gln Leu Pro Asp Asp  
1 5 10 15

Glu Ser Leu Phe Phe Gly Asp Thr Gly Leu Ser Lys Asn Pro Ile Glu  
20 25 30

Leu Val Glu Gly Trp Ala Ser Ser Trp Lys  
35 40

<210> 10  
<211> 42  
<212> PRT  
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<400> 10

Phe Glu His Pro His Ile Gln Asp Ala Ala Ser Gln Leu Pro Asp Asp  
1 5 10 15

Glu Ser Leu Phe Phe Gly Asp Thr Gly Leu Ser Lys Asn Pro Ile Glu  
20 25 30

Leu Val Glu Gly Trp Phe Ser Ser Ala Lys  
35 40

seqid.ST25.txt

<210> 11  
<211> 42  
<212> PRT

<213> Vesicular stomatitis virus

<400> 11

Phe Glu His Pro His Ile Gln Asp Ala Ala Ser Gln Leu Pro Asp Asp  
1 5 10 15

Glu Ser Leu Phe Phe Gly Asp Thr Gly Leu Ser Lys Asn Pro Ile Glu  
20 25 30

Leu Val Glu Gly Trp Phe Ser Ser Trp Lys  
35 40

<210> 12  
<211> 42  
<212> PRT

<213> Vesicular stomatitis virus

<400> 12

Phe Glu His Pro His Ile Gln Asp Ala Ala Ser Gln Leu Pro Asp Asp  
1 5 10 15

Glu Ser Leu Phe Phe Gly Asp Thr Gly Leu Ser Lys Asn Pro Ile Glu  
20 25 30

Leu Val Glu Ala Trp Phe Ser Ser Ala Lys  
35 40

<210> 13  
<211> 42  
<212> PRT

<213> Vesicular stomatitis virus

<400> 13

Phe Glu His Pro His Ile Gln Asp Ala Ala Ser Gln Leu Pro Asp Asp  
1 5 10 15

Glu Ser Leu Phe Phe Gly Asp Thr Gly Leu Ser Lys Asn Pro Ile Glu  
20 25 30

Leu Val Glu Ala Ala Phe Ser Ser Ala Lys  
35 40

<210> 14  
<211> 42  
<212> PRT

<213> Vesicular stomatitis virus

<400> 14

Phe Glu His Pro His Ile Gln Asp Ala Ala Ser Gln Leu Pro Asp Asp  
1 5 10 15

seqid.ST25.txt

Glu Ser Leu Phe Phe Gly Asp Thr Gly Leu Ser Lys Asn Pro Ile Glu  
20 25 30

Leu Val Glu Asp Ala Phe Ser Ser Ala Lys  
35 40

<210> 15  
<211> 35  
<212> PRT  
<213> Vesicular stomatitis virus

<400> 15

Phe Glu His Pro His Ile Gln Asp Ala Ala Ser Gln Leu Pro Asp Asp  
1 5 10 15

Glu Ser Leu Phe Phe Gly Asp Thr Gly Leu Ser Lys Asn Pro Ile Glu  
20 25 30

Lys Ser Ser  
35

<210> 16  
<211> 32  
<212> PRT  
<213> Vesicular stomatitis virus

<400> 16

Phe Glu His Pro His Ile Gln Asp Ala Ala Ser Gln Leu Pro Asp Asp  
1 5 10 15

Glu Ser Leu Pro Ile Glu Leu Val Glu Gly Trp Phe Ser Ser Trp Lys  
20 25 30

<210> 17  
<211> 54  
<212> PRT  
<213> Vesicular stomatitis virus

<400> 17

Phe Glu His Pro His Ile Gln Asp Ala Ala Ser Gln Leu Pro Asp Asp  
1 5 10 15

Glu Ser Leu Phe Phe Gly Asp Thr Gly Leu Ser Lys Asn Pro Ile Glu  
20 25 30

Leu Val Glu Gly Trp Phe Ser Ser Trp Lys Ser Ser Ser Pro Asn Lys  
35 40 45

Gly Ser Gly Thr Thr Ser  
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<210> 18  
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seqid.ST25.txt

<212> PRT

<213> Vesicular stomatitis virus

<400> 18

Phe Glu His Pro His Ile Gln Asp Ala Ala Ser Gln Leu Pro Asp Asp  
1 5 10 15

Glu Ser Leu Phe Phe Gly Asp Thr Gly Leu Ser Lys Asn Pro Ile Glu  
20 25 30

Lys Ser Ser Ser Pro Asn Lys Gly Ser Gly Thr Thr Ser  
35 40 45

<210> 19

<211> 6

<212> PRT

<213> Vesicular stomatitis virus

<400> 19

Phe Phe Gly Asp Thr Gly  
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<210> 20

<211> 29

<212> PRT

<213> Vesicular stomatitis virus

<400> 20

Phe Glu His Pro His Ile Gln Asp Ala Ala Ser Gln Leu Pro Asp Asp  
1 5 10 15

Glu Ser Leu Phe Phe Gly Asp Thr Gly Leu Ser Lys Lys  
20 25

<210> 21

<211> 53

<212> PRT

<213> Vesicular stomatitis virus

<400> 21

Phe Glu His Pro His Ile Gln Asp Ala Ala Ser Gln Leu Pro Asp Asp  
1 5 10 15

Glu Ser Leu Phe Phe Gly Asp Thr Gly Leu Ser Lys Asn Pro Ile Glu  
20 25 30

Leu Val Glu Gly Trp Phe Ser Ser Trp Lys Ser Ser Ser Thr Val Ile  
35 40 45

His Ala Asp Asn Pro  
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<210> 22

<211> 42

seqid.ST25.txt

<212> PRT

<213> Vesicular stomatitis virus

<400> 22

Phe Glu His Pro His Ile Gln Asp Ala Ala Ser Gln Leu Pro Asp Asp  
1 5 10 15

Glu Ser Leu Phe Phe Gly Asp Thr Gly Leu Ser Lys Asn Pro Ala Ser  
20 25 30

Ser Phe Trp Gly Glu Val Leu Glu Ile Lys  
35 40

<210> 23

<211> 42

<212> PRT

<213> Vesicular stomatitis virus

<400> 23

Phe Glu His Pro His Ile Gln Asp Ala Ala Ser Gln Leu Pro Asp Asp  
1 5 10 15

Glu Ser Leu Phe Phe Gly Asp Thr Gly Leu Ser Lys Asn Pro Ala Ser  
20 25 30

Ser Phe Ala Gly Glu Val Leu Glu Ile Lys  
35 40